

## Abstract of the Disclosure

A magnetic bearing wherein axially spaced combinations of permanent magnets on a rotor and stator are polarized to levitate the rotor and positioned with the rotor magnets offset axially outwardly (or inwardly) of the stator magnets to allow a force balance to be achievable to bear axial thrust. An electrically energizable coil modulates magnetic flux between the respective stator and rotor magnets for each combination. A first electrical circuit regulates electrical energy to the coils for maintaining a reference position of the rotor. A second electrical circuit compares feed-back of electrical energy to at least one of the coils with a reference electrical energy of about zero amps or volts and integrates the differences until the difference is about zero to provide a signal to modify the reference position, whereby to attain a zero force balance position wherein the current which must be supplied to the coils may be reduced to near zero.